

# VU Research Portal

## **A solution-focused research approach to achieve an implementable revolution in digital mental health**

Mohr, David C.; Riper, Heleen; Schueller, Stephen M.

### ***published in***

JAMA Psychiatry  
2018

### ***DOI (link to publisher)***

[10.1001/jamapsychiatry.2017.3838](https://doi.org/10.1001/jamapsychiatry.2017.3838)

### ***document version***

Publisher's PDF, also known as Version of record

### ***document license***

Article 25fa Dutch Copyright Act

[Link to publication in VU Research Portal](#)

### ***citation for published version (APA)***

Mohr, D. C., Riper, H., & Schueller, S. M. (2018). A solution-focused research approach to achieve an implementable revolution in digital mental health. *JAMA Psychiatry*, 75(2), 113-114.  
<https://doi.org/10.1001/jamapsychiatry.2017.3838>

### **General rights**

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal ?

### **Take down policy**

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

### **E-mail address:**

[vuresearchportal.ub@vu.nl](mailto:vuresearchportal.ub@vu.nl)

## VIEWPOINT

# A Solution-Focused Research Approach to Achieve an Implementable Revolution in Digital Mental Health

**David C. Mohr, PhD**  
Department of  
Preventive Medicine,  
Center for Behavioral  
Intervention  
Technologies, Feinberg  
School of Medicine,  
Northwestern  
University, Chicago,  
Illinois.

**Heleen Riper, PhD**  
Department of Clinical,  
Neuro and  
Developmental  
Psychology, Vrije  
Universiteit,  
Amsterdam,  
the Netherlands.

**Stephen M. Schueller, PhD**  
Department of  
Preventive Medicine,  
Center for Behavioral  
Intervention  
Technologies, Feinberg  
School of Medicine,  
Northwestern  
University, Chicago,  
Illinois.

**Corresponding  
Author:** David C. Mohr,  
PhD, Department of  
Preventive Medicine,  
Center for Behavioral  
Intervention  
Technologies, Feinberg  
School of Medicine,  
Northwestern  
University, 750 N  
Lakeshore Dr, 10th  
Floor, Chicago, IL  
60613 (d-mohr  
@northwestern.edu).

**Digital mental health (DMH)** interventions have promised to revolutionize mental health care by increasing its accessibility, availability, attractiveness, and cost-effectiveness. The first generation of web-based DMH interventions have consistently been found to be clinically effective for common mental disorders, such as depression and anxiety, in more than 100 randomized clinical trials (RCTs) and meta-analyses, particularly when accompanied by low-intensity coaching.<sup>1</sup> Inspired by this research, numerous health care systems have attempted to implement DMH interventions to address the large burden of mental health. However, these real-world implementation efforts have failed, often because they are not used by patients or therapists. This large research to practice gap suggests failures at many points, including DMH intervention design, research methods, and implementation approaches. The promised revolution in mental health will require a paradigm shift that addresses all 3 components to overcome the design, research, and routine care chasms.

In this Viewpoint, we propose addressing this research to practice gap by shifting to a solution-focused research approach.<sup>2</sup> A solution-focused approach differs from an efficacy approach by prioritizing the development of a solution to a practical problem over the production of generalizable efficacy knowledge that might be correct in abstract but does not represent or translate to any specific real-world setting. We will more likely be successful if we produce a sustainable solution in a real-world setting and then adapt to other contexts. We suggest that solution-focused research can achieve its goals more rapidly by progressing through the 3 stages of create, trial, and sustain<sup>3</sup> rather than the traditional phases of discovery, pilot, efficacy, and effectiveness that are more familiar to clinical scientists.

## Create

Adherence and sustained engagement with DMH interventions is a long-standing, recognized problem.<sup>4</sup> This lack of engagement suggests fundamental problems in the design of DMH interventions, which commonly rely on psychoeducational self-help materials and worksheets delivered via digital media that require significant time and effort on the part of patients. Patients' enthusiasm for these designs can be gauged by the failure of many to complete more than 1 or 2 sessions.<sup>5</sup>

Most RCT-evaluated DMH interventions have been designed by mental health experts (including us) using traditional psychotherapy principles to provide evidence-

based treatments aimed at educating and encouraging patients to do the things that we believe will lead to improvement. McLuhan<sup>6</sup> observed that the first-generation of any new medium imitates the one that came before it. Although our first-generation DMH interventions, translating evidence-based treatments into web-based treatments, have provided useful insights, in creating our next generation of DMH interventions, we must be willing to let go of old paradigms, such as internet-based cognitive behavioral therapy. We must be willing to design new digital experiences that leverage unique affordances of technologies and novel insights they can help deliver. Digital tools need to fit into the fabric of patients' lives and accommodate practitioners' workflows. Design approaches have started to be used in DMH interventions, but our goal should not be to design the best internet-based cognitive behavior treatment; instead, we must understand the lives and workflows that these tools are intended to support and address stakeholders' needs, preferences, and goals.

Although app stores offer standalone apps (as bookstores offer self-help books), our health care system provides services and is better suited to a "bricks and clicks" model that blends digital and real-world human services. However, the design of services (eg, the goals, procedures, and clinical strategies that define a practitioner's actions) has received far less attention than the technologies that enable them. Rather than designing patient-facing technologies that require human support to encourage patient engagement, we should be designing cost-effective services that can be supported by digital technologies. Technologies will enable new forms of services that can be efficient yet engaging. To achieve this, we must design these new services and the supporting technologies and interfaces.

Implementation design must also occur from the beginning. The failure to bridge DMH research and real-world implementation in care settings indicates that implementation cannot be left as a post hoc procedure. Sustainable DMH interventions will require that implementation plans addressing multilevel organizational issues, reimbursement, and business models be defined from the start, along with the design of the services and technologies.

Last, although we present "create" as the initial phase, design processes do not end as the trial commences. Instead, design is an iterative process, and redesign must be built into the life of a DMH intervention and its evaluation. Digital mental health interventions must change to address changes in the care environment and technological ecosystem.

## Trial Methods

Traditional evaluation methods can take 17 years to move an intervention from initial concept to implementation. Digital technologies are continuously evolving, requiring rapid evaluation to prevent obsolescence. Thus, DMH trial methods cannot lock down intervention elements; rather, trial methods must allow for learning, iteration, and redesign, which can be achieved by integrating continuous quality improvement methods and principles of iterative design into trial methods.<sup>7</sup> A number of methods of integrating effectiveness and implementation evaluation can also be leveraged to move rapidly from the creation of the initial DMH intervention through optimization and evaluation to support sustainable implementation.<sup>3</sup>

Our ability to deliver DMH interventions remotely and recruit for RCTs from large pools of patients (sometimes the entire internet) has likely biased the evidence base. We search for participants who will use our tools rather than rigorously evaluating them in a way that can generalize. Solution-focused evaluation should be conducted in the settings where DMH interventions are designed and where they will ultimately be sustainably implemented.

## Sustainable Implementation

Publication of the efficacy trial is often the end goal of funded research. We argue that the end goal of research should be sustainable implementation. Solution-focused research can support sustainment by slowly withdrawing research support and transferring critical knowledge and skills to the organization in which the DMH has been designed and evaluated and has demonstrated

effectiveness.<sup>3</sup> For example, shifting support for training and fidelity monitoring of DMH practitioners will allow the organization to manage staff turnover. Procedures for monitoring the health of the DMH system (eg, patient flow into and through the DMH system) will support the identification and correction of emerging problems in a timely manner. After a sustainable implementation has been achieved, the DMH intervention can serve as a prototype that can be adapted and scaled out to other health care contexts.

## Conclusion

The implementation failures of the past should spur us to reevaluate our field. To truly revolutionize mental health services, we must let go of preconceptions and explore new ways of developing, providing, and evaluating DMH interventions that result in sustainable implementation in the real world. Design processes must be driven by input from multiple stakeholder groups, including patients, practitioners, administrators, and payers, to create service definitions, enabling technologies, and implementation plans to produce solutions that work. The creation of new intervention paradigms requires that we let go of our preconceptions about what such treatments should look like. Evaluation methods must become more rapid and agile, supporting iterative improvements during trial processes. Sustainment, supported by the hand-off from researchers to organizations who have teamed in the development and evaluation, must be the end goal of DMH research. By adopting these solution-focused methods, we can achieve an implementable revolution in DMH.

## ARTICLE INFORMATION

**Published Online:** December 13, 2017.  
doi:10.1001/jamapsychiatry.2017.3838

**Conflict of Interest Disclosures:** Dr Mohr reported receiving honoraria from Optum Behavioral Health and has an ownership interest in Actualize Therapy Ltd. No other disclosures were reported.

## REFERENCES

1. Richards D, Richardson T. Computer-based psychological treatments for depression:

a systematic review and meta-analysis. *Clin Psychol Rev.* 2012;32(4):329-342.

2. Watts DJ. Should social science be more solution-oriented? [published online January 10, 2017]. *Nat Hum Behav.* doi:10.1038/s41562-016-0015

3. Mohr DC, Lyon AR, Lattie EG, Reddy M, Schueller SM. Accelerating digital mental health research from early design and creation to successful implementation and sustainment. *J Med Internet Res.* 2017;19(5):e153.

4. Eysenbach G. The law of attrition. *J Med Internet Res.* 2005;7(1):e11.

5. Gilbody S, Littlewood E, Hewitt C, et al; REEACT Team. Computerised cognitive behaviour therapy (cCBT) as treatment for depression in primary care (REEACT trial): large scale pragmatic randomised controlled trial. *BMJ.* 2015;351:h5627.

6. McLuhan M. *Understanding Media: The Extensions of Man.* New York, NY: McGraw-Hill; 1964.

7. Mohr DC, Schueller SM, Riley WT, et al. Trials of intervention principles: evaluation methods for evolving behavioral intervention technologies. *J Med Internet Res.* 2015;17(7):e166.